***Technology Fair Student Notebook***

***Project Plan***

(Click on the gray box, then begin typing to enter information. **A completed copy of this page must be submitted for your application.**)

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| --- | --- |
| **Project Title:** | Robot Dog Walker |

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| --- | --- |
| **Team Members:** | Joanna Joseph and Joel Joseph |

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| --- | --- | --- | --- |
| **Grade Level:** | 6 & 4 | **School:** | Aurora Quest K-8 |

**Competition Category (check which one)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Web 2.0 |  | Productivity Software Projects |
|  | Multimedia Applications |  | Digital Art & Photography |
|  | Digital Storytelling |  | Podcasting |
|  | Programming |  | Robotics |

**Hardware and Software Used**

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| --- | --- |
| List all the hardware used to create this project. | Laptop, LEGO NXT Mindstorms Brick and LEGO parts, Light Sensor, Color Sensor, Chart paper, Paint and string |

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| --- | --- |
| List all the software used to create this project. | LEGO NXT Mindstorms programming |

**Briefly describe your project**

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| The project is a robot on wheels pulling along a lego dog. The robot basically follows the path by recognizing the reflected light. It comes to a stop at the stop sign because it recognizes the red color in the stop sign. |

***Narrative***

(This page is not required for your application, but must be available for judging at the Technology Fair.)

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| Why did you create this project? | When families go to the park to have a fun time and walk the dog, say there is only one adult, then there is the problem of one person watching the kids and walking the dog. With the Robot Dog Walker, you can watch the kids and make sure they are safe while the robot walks your dog. |

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| --- | --- |
| What did you learn while working on this project? | We learned to program the LEGO NXT Mindstorms brick and to build parts of the robot. We learned how to make it mobile (our robot has wheels) and how to make it do things with arms (like pull the dog along). We also learned how to make our robot use sensors. We learned how to make our robot follow a black line (the path) using the light and color sensors. We learned to use the fuzzy line following program. We also learned to work together. |

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| Why is this project important to you? | This project is important to us because we are concerned about the safety of children. We have heard of many stories of children abducted from parks and neighborhoods while at play. We want to make the world a safer place for children and give parents peace of mind. |

***Procedure***

(This page is not required for your application, but must be available for judging at the Technology Fair.)

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| Describe all of the steps needed to create your project. | First we needed all the parts to build our robot. We needed the NXT Brick which is the brain of the robot. We needed the sensors, wires to connect the sensors to the brick, lego pieces to build the framework to hold the brick and wheels and sensors and arms. We also needed a laptop with the NXT software to program the robot. We also needed the wire we use to download the program onto the robot brain. We also needed 2 chart papers and tape to tape the chart papers together to make one big piece of chartpaper on which we designed our park. We tried to draw our path using permanent markers first. But it was too glossy that our robot could not recognize the black color. Then we tried paint and that worked well. Once we designed our robot and our park, we tried to run our robot around our path. It did great. Then we made a paper stop sign and made sure that our robot would stop when the color sensor read red. Then all we needed to do was try to get our robot to pull the dog as it went around the park. |

***Bibliography***

(Please make sure you are obeying copyright laws. This page is not required for your application, but must be available for judging at the Technology Fair.)

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| Please list all of your sources here. | We used the LEGO NXT Robot and Programming software. |